

Amendments To Claims

1-22. (Cancelled).

23. (New) A key-frame extraction system, comprising:

video frame extractor that extracts each of a series of video frames from a video;

a set of frame analyzers that obtain the series of video frames in parallel from the video frame extractor, each frame analyzer selecting a corresponding set of candidate key-frames from the series by performing a different corresponding analysis on each video frame in the series such that the analyses are selected to detect multiple types of meaningful content in the video;

key-frame selector that obtains the corresponding candidate key-frames from each frame analyzer and arranges the candidate key-frames into a set of clusters and that selects one of the candidate key-frames from each cluster as a key-frame for the video.

24. (New) The key-frame extraction system of claim 23, further comprising an audio event detector that obtains the series of video frames from the video frame extractor and that selects a corresponding set of candidate key-frames from the series by performing an audio analysis on each video frame in the series and that provides the corresponding set of candidate key-frames to the key-frame selector.

25. (New) The key-frame extraction system of claim 23, wherein the key-frame selector selects the key-frames by determining an importance score for each candidate key-frame in each cluster.

26. (New) The key-frame extraction system of claim 25, wherein the key-frame selector determines the importance scores by determining an image content of each candidate key-frame.

27. (New) The key-frame extraction system of claim 25, wherein the key-frame selector determines the importance scores by

determining an audio content of each candidate key-frame.

28. (New) The key-frame extraction system of claim 23, wherein the key-frame selector selects the key-frames by determining an image quality for each candidate key-frame in each cluster.

29. (New) The key-frame extraction system of claim 23, wherein the frame analyzers include a color histogram analyzer.

30. (New) The key-frame extraction system of claim 23, wherein the frame analyzers include a color layout analyzer.

31. (New) The key-frame extraction system of claim 23, wherein the frame analyzers include a fast camera motion detector.

32. (New) The key-frame extraction system of claim 23, wherein the frame analyzers include a camera motion tracker.

33. (New) The key-frame extraction system of claim 23, wherein the frame analyzers include an object motion analyzer.

34. (New) The key-frame extraction system of claim 23, wherein the frame analyzers include a human face detector.

35. (New) The key-frame extraction system of claim 23, further comprising a user interface for displaying a set of video frames in the video previous to each key-frame and a set of video frames in the video subsequent to each key-frame and for obtaining a user selection of one or more of the video frames.

36. (New) A method for key-frame extraction, comprising:  
selecting multiple sets of candidate key-frames from a video including detecting multiple types of meaningful content in the video by performing in parallel a set of different analyses on each video frame in the video;  
arranging the candidate key-frames into a set of clusters;  
selecting one of the candidate key-frames from each cluster as a key-frame for the video.

37. (New) The method of claim 36, wherein selecting multiple sets of candidate key-frames includes selecting a set of candidate key-frames from the video by performing an audio analysis on each video frame in the video.

38. (New) The method of claim 36, wherein selecting one of the candidate key-frames from each cluster includes determining an importance score for each candidate key-frame in each cluster.

39. (New) The method of claim 38, wherein determining an importance score comprises determining an image content of each candidate key-frame.

40. (New) The method of claim 38, wherein determining an importance score comprises determining an audio content of each candidate key-frame.

41. (New) The method of claim 36, wherein selecting one of the candidate key-frames from each cluster includes determining an image quality for each candidate key-frame in each cluster.

42. (New) The method of claim 36, wherein performing in parallel a set of different analyses includes performing a color histogram analysis.

43. (New) The method of claim 36, wherein performing in parallel a set of different analyses includes performing a color layout analysis.

44. (New) The method of claim 36, wherein performing in parallel a set of different analyses includes performing a fast camera motion analysis.

45. (New) The method of claim 36, wherein performing in parallel a set of different analyses includes performing a camera motion detection.

46. (New) The method of claim 36, wherein performing in parallel a set of different analyses includes performing an object motion track.

47. (New) The method of claim 36, wherein performing in parallel a set of different analyses includes performing a human face detection.

48. (New) The method of claim 36, further comprising displaying a set of video frames in the video previous to each key-frame and a set of video frames in the video subsequent to each key-frame and obtaining a user selection of one or more of the video frames.